CLAIMS

Claimed is:

1.   A method for categorizing animals by meat quality comprising:

obtaining an ultrasound measurement of longissimus dorsi muscle between the last

rib and 1st lumbar at weaning age;

determining an angle of connective tissue in said longissimus dorsi muscle; and

allocating said specimen into a category based on said angle of connective tissue.

2.   The method for categorizing animals of claim 1 further comprising determining a

ribeye area.

3.   The method for categorizing animals of claim 3 wherein said ribeye area is a

circumference of a longissimus dorsi muscle and fat thickness.

4.   The method for categorizing animals of claim 1 further comprising determining a fat

thickness.

5.   The method for categorizing animals of claim 1 further comprises determining

intramuscular fat.

6.   The method for categorizing animals of claim 1 further comprising determining a

ribeye shape.

7.   The method for categorizing animals of claim 6 wherein said ribeye shape is

determined by a ratio of longissimus dorsi muscle depth and longissimus dorsi

muscle length.

8.   The method for categorizing animals of claim 1 wherein said ultrasound

measurement further comprising the step of:

determining three landmarks in said specimen prior to said determining.

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9.   The method for categorizing animals of claim 8 wherein one of said three landmarks is a fat line.

10.   The method for categorizing animals of claim 8 wherein one of said three landmarks is a vertebrae process.

11.   The method for categorizing animals of claim 8 wherein one of said three landmarks is a junction of a lateral portion of a longissimus muscle and an intercostal junction.

12.   The method for categorizing animals of claim 1 wherein said ultrasound measurement is obtained with an ultrasound transducer comprising a conforming guide wherein said conforming guide comprises a collar for receiving said transducer and a pliable seal receiving said collar and wherein said pliable seal conforms to a contour of said animal.

13.   The method for categorizing animals of claim 1 wherein said animals is chosen from a group consisting of Bovidea family, Equidae family and Suidae family.

14.   The method for categorizing animals of claim 13 wherein said animals is chosen from a group consisting of Ovis genus, Bos genus and Capra genus.

15.   The method for categorizing animals of claim 13 wherein said animals is chosen from a group consisting of cattle, swine, bison, sheep, goats, horses, caribou and deer.

16.   A method for categorizing cattle by meat quality comprising:

obtaining an ultrasound measurement of a cattle specimen at a location of

approximately 3/4 of the length of a longissimus dorsi muscle between the

12th rib and 1st lumbar;

determining a tenderness from said ultrasound measurement; and

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allocating said specimen into a category based on said tenderness.

17. The method for categorizing cattle of claim 16 wherein said tenderness is determined by an angle of connective tissue deposition in a longissimus dorsi muscle relative to a plane comprising the centerline of said specimen.

18. The method for categorizing cattle of claim 16 wherein said tenderness is proportional to a connective tissue thickness.

19. The method for categorizing cattle of claim 16 wherein said harvest quality parameter comprises STRESS.

20. The method for categorizing cattle of claim 16 further comprising determining a change in said angle of connective tissue in said longissimus dorsi muscle.

21. The method for categorizing cattle of claim 16 further comprising determining a separation of lines of said connective tissue in said longissimus dorsi muscle.

22. A process for predicting meat tenderness in an animal comprising the steps of:

obtaining a longitudinal ultrasound measurement of a longissimus dorsi muscle of said animal;

determining an angle of connective tissue in said longissimus dorsi muscle relative to a centerline of said animal at a location of a longissimus dorsi muscle between the last rib and 1st lumbar; and

assigning a tenderness grade based on said angle of connective tissue.

23. The process for predicting meat tenderness of claim 22 further comprising obtaining three longitudinal ultrasound measurements.

24.   The process for predicting meat tenderness of claim 22 further comprising determining a separation of strings of connective tissue is said longissumus dorsi muscle and refining said tenderness grade based on said separation wherein when said separation is less said tenderness grade is improved.

25.   The process for predicting meat tenderness of claim 22 wherein said process occurs at weaning.

26.   The process for predicting meat tenderness of claim 22 further comprising:
determining intramuscular fat in said longissimus dorsi muscle.

27.   A system for determining meat tenderness in an animal comprising:

an ultrasound system for obtaining an image a longissimus dorsi muscle in said animal;

a measurement device for determining an angle of connective tissue in said longissimus dorsi muscle from said image.

28.   The system for determining meat tenderness of claim 27 further comprising a measurement device for determining a thickness of said connective tissue in said longissimus muscle.

29.   The system for determining meat tenderness of claim 27 further comprising a measurement device for determining intramuscular fat in said longissimus muscle.

30.   A method for categorizing animals by meat quality comprising:

obtaining an ultrasound measurement of longissimus dorsi muscle between the last rib and 1st lumbar at weaning age;

determining an angle of connective tissue in said longissimus dorsi muscle;

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determining a change in said angle of connective tissue in said longissimus dorsi

muscle; and

allocating said specimen into a category based on said angle of connective tissue.

31. The method for categorizing animals of claim 30 wherein said specimen is allocated

into said category based on said angle and said change in said angle.

32. A method for categorizing animals by meat quality comprising:

obtaining an ultrasound measurement of longissimus dorsi muscle between the last

rib and 1st lumbar at weaning age;

determining an angle of connective tissue in said longissimus dorsi muscle;

determining a separation of lines of said connective tissue in said longissimus dorsi

muscle; and

allocating said specimen into a category based on said angle of connective tissue.

33. The method for categorizing animals of claim 32 wherein said specimen is allocated

into said category based on said angle and said separation.

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